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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,421	04/20/2004	Mariana Rodica Munteanu	50103-576	2557

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EXAMINER
RICKMAN, HOLLY C

ART UNIT	PAPER NUMBER
1773	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/827,421

Applicant(s)

MUNTEANU ET AL.

Examiner

Holly Rickman

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/15/06; 4/20/04.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 8 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 is indefinite because it is not clear whether the “at least one Cu-containing magnetic recording layer (CuML)” is referring to the CuML layer in claim 1 or an additional CuML layer. If it is an additional layer, the examiner suggests amending the claim to recite “further including at least one additional Cu-containing magnetic recording layer (CuML).”

Claim 21 is indefinite because it is not clear how the “non-magnetic interlayer” is structurally related to the rest of the medium.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 8-31638 (rejection based on English abstract and Japanese document).

JP 8-31638 discloses a magnetic recording medium having a magnetic layer formed from an alloy of CoCrTaCu wherein the alloy contains the following amounts: 6-20 at % Cr, 0-9 at % Ta, 0.5-7 at % Cu with Co as the balance. The table shown on page 3 of the Japanese document lists specific examples of CoCrTaCu alloys which fall within the ranges set forth in the claims. The abstract also discloses the the CoCrTaCu alloy can further include Pt or B (see claim 5)

With regard to claims 2-4, the examiner notes that these claims further limit the compositions of alloys a) and b) but do not require that the recording layer must be formed from alloys a) or b). JP 8-31638 discloses an alloy corresponding to alloy c) and thus, meets all limitations of the claims on this basis.

With regard to claims 6-7, JP 8-31638 discloses values of Cr between 6 and 20 at%. The endpoint of 20 at% anticipates claim 6. The endpoint of 6 at% anticipates claim 7.

5. Claims 1, 3, 5-15 and 20-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Okuyama et al. (US 6682834).

Okuyuma et al. disclose a magnetic recording medium having multiple magnetic layers formed from CoCrPtBCu alloys. The reference teaches a magnetic layer having the following alloy composition: Cr=20-26 at%; Pt=6-20 at%; B=1-7 at5; and Cu=2-7 at% with the balance being Co (see abstract).

Okuyuma et al. disclose a specific example of a recording medium having an intermediate layer of CoCrTa (corresponding to the claimed Cu-free ML), a lower Cr-rich

Art Unit: 1773

magnetic layer formed from Co₅₅Cr₂₅Pt₁₁B₄Cu₅ and an upper Cr-poor magnetic layer formed from Co₅₉Cr₂₀Pt₁₀B₆Cu₅ (col. 8, lines 48-61).

The examiner notes that claims 5-7 limit the composition of alloy (c) as set forth in claim 1, but do not require that the magnetic layer is formed from (c). Thus, Okuyama meets the limitations of these claims because it discloses alloys having compositions in accordance with (a) and (b) in claim 1.

The reference teaches that the magnetic recording medium has a non-magnetic substrate, multiple underlayers and seedlayers corresponding to the claimed seed, underlayer and interlayer set forth in claims 20-21.

6. Claims 1, 5-11, 13, 16-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Ajan (US 7074508).

Ajan discloses a magnetic recording medium having multiple magnetic layers antiferromagnetically coupled via a non-magnetic spacer layer. The reference teaches a structure having a non-magnetic substrate, a seed layer, an underlayer, a CoCr-based intermediate layer, and magnetic layers formed from CoCrPtBCu wherein the alloy contains the following amounts: Cr=5-40 at%; Pt=8-16 at%; B=0-15 at%; and Cu=0-6 at% with the balance being Co. See Figures 4-6; col. 5, line 43 to col. 6, line 40; col. 11, lines 15-34). It is noted that the amounts of Cr disclosed by Ajan overlap the claimed range of Cr greater than 0 and less than or equal to either 20 or 30 at%.

The examiner notes that claims 5-7 limit the composition of alloy (c) as set forth in claim 1, but do not require that the magnetic layer is formed from (c). Thus, Ajan meets the limitations

of these claims because it discloses alloys having compositions in accordance with (a) and (b) in claim 1.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shimizu et al. (US 2003/0017370) and Girt et al. (US 6964819) are cited as art of interest.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1773

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Holly Rickman
Primary Examiner
Art Unit 1773

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December 5, 2006